

IN THE SPECIFICATION:

Please replace the abstract of the specification with the following new abstract:

One embodiment of the invention sets forth a hardware-based physics processing unit (PPU) having unique architecture designed to efficiently generate physics data. The PPU includes a PPU control engine (PCE), a data movement engine and a floating point engine (FPE). The PCE manages the overall operation of the PPU by allocating memory resources and transmitting graphics processing commands to the FPE and data movement commands to the DME. The FPE includes multiple vector processors that operate in parallel and perform floating point operations on data received from a host unit to generate physics simulation data. The DME facilitates the transmission of data between the host unit and the FPE by performs data movement operations between memories internal and external to the PPU.